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MAYNARD OWEN WILLIAMS

NOT ROOT BEER BUT TEA IS THIS ARAB SERVING BOY'S BURDEN; IN HIS LAND TEA (Bulletin No. 4) IS A CHASER FOR COFFEE

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Drought Dries Crops, Cuts Power in Portugal

PORTUGAL, along with the rest of southern Europe, is suffering the worst drought in years. For months no rain has fallen. Crops are drying up. Reservoirs are at low levels. Power is being rationed.

This green flowering "corner-land" of Europe, the southwesternmost country of the continent, normally has more rain than its neighbor, Spain. As on America's west coast, winds from the ocean drop their moisture as they are forced upward by the mountains, leaving little precipitation for areas far inland.

Matches Indiana in Size

Portugal, a coastal land, compares in climate and geography with California. North Portugal is like the part of California around San Francisco, while Lisbon (Lisboa, illustration, inside cover) has been likened to Los Angeles, and the dry Algarve has its counterpart in the deserts and irrigated sections of southernmost California.

A big difference is in size. California is four and a half times as large as Portugal. Indiana is the nearest match among the 48 states. However, in population, Portugal's seven and one-half million is not too much smaller than big California's ten million.

Though small and not wealthy, Portugal ranks as a compact, strongly unified, well-fed country. It is short on modern industry but long on national pride. During the past 20 years, under the Estado Novo (New State), Portugal has made great strides in internal improvement. It has balanced its budget, built roads and schools, and improved harbors.

Traditional ally of Great Britain, it was Portugal who opened to England the continental doors of "Fortress Europe" in 1810. Thus began the Peninsular Campaign under the Duke of Wellington, the "beginning of the end" for Napoleon.

Port Wine Portugal's Trade-mark

England has large investments in northern Portugal's beautiful wine-producing area. Wine is the leading export of this section. The trade-mark of Portugal in foreign ports is port wine, named from the city of Pôrto, which also gave the country its name. Some of Portugal's first-ranking export—cork—leaves the country as stoppers in wine bottles. The remainder is shipped in rough state as it is peeled off the cork oak trees of southern Portugal.

As a seaside nation, Portugal has a highly developed fishing industry. Huge amounts of sardines are exported. Before the Estado Novo program was started, wheat had been a leading import. Now more than enough is grown. Other land products include corn, olives, figs, turpentine, resin, and wool. Foremost manufactures are textiles, lace, and porcelain tiles, the last-named trade borrowed from the Moors.

Portuguese colonies, mostly in Africa, make up an empire that ranks third among the world's colonial empires. They supply such necessary commodities as copra, sisal, coffee, sugar, cinchona bark, and cacao. The

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PAN AMERICAN WORLD AIRWAYS

AMID MODERN HOUSING DEVELOPMENTS, THIS 200-YEAR-OLD AQUEDUCT SPANS THE ALCÁNTARA RIVER IN LISBON'S WESTERN OUTSKIRTS

The central arches are 200 feet high. Though old, this aqueduct should not be confused with the ancient Roman Alcántara which was built in 105 A.D. across the Tagus River in western Spain. "Alcántara" is from the Arab words meaning "the bridge." Lisbon, capital and leading city of Portugal (Bulletin No. 1), lies to the right.

Siberia's Baikal Is World's Deepest Lake

AMONG the great fresh-water lakes of the world, Siberia's Lake Baikal (Ozero Baikal) ranks fifth in size but first in depth. It is so deep that it holds more water than the salty Caspian Sea, which covers 13 times its area.

Shaped like one of New York's Finger Lakes, Baikal is nearly twice the size of Lake Ontario. It also outranks Erie in size, but is smaller than lakes Superior, Huron, and Michigan. Africa's Victoria is the only other fresh-water body larger than Baikal.

Eurasia's Largest Lake

Across the Trans-Siberian Railway, Lake Baikal thrusts a watery road-block about halfway between the Ural Mountains and Vladivostok. For 150 miles the double-tracked railroad skirts the precipitous southern shoreline, passing through 50 tunnels. For another 150 miles the road follows the Angara, the lake's turbulent outlet river, and the Selenga, largest of more than 300 streams flowing into Baikal.

The lake, perched 1,515 feet above sea level, is about 385 miles long, north by south, and 15 to 50 miles broad. Pine-clad mountains line its shores. Tempests lash its waters; earthquakes rock its shores. Its 13,200 square miles of area make it Eurasia's greatest body of fresh water.

Baikal has been called a natural museum of ancient species. Recent soundings in its deeps— 5,712 feet at one point—revealed many never catalogued before. There dwells the inland seal, 1,200 miles from the Arctic Ocean. There is the fresh-water sponge. There sturgeon, salmon, and herring supply fishing fleet and cannery.

The Baikal region is blessed with the resources for industrial development. The Angara River, spilling its 1,321,000 gallons a second through gorges and rapids, has one of the world's largest hydroelectric potentials. If it were fully harnessed, it would develop 44 times the power of Dneprostroi, the giant Soviet dam on the Dnepr. The Russians have partially tamed the Angara torrent, the Baikal dam alone developing a capacity of 600,000 kilowatts.

Russia's Gate to China

Supplementing water power is the Cheremkhovo coal field. This coal, added to native lime and salt, formed the basis of a wartime synthetic-rubber industry. Forty-one miles down the Angara from Baikal is Irkutsk, the largest city for more than a thousand miles in any direction. This city (illustration, next page) was the czars' penal capital for exiles, but is now a metropolis of a quarter-million inhabitants.

Formerly, the Angara-Baikal-Selenga system was Russia's gate to Mongolia and China. To this navigable waterway the camel caravans transferred their silk and tea. When winter froze the lake, often to a depth of five feet, sledges replaced ferries. Regiments maneuvered and trains sometimes steamed across the ice.

The white man discovered Lake Baikal in 1643. But to the Yakuts

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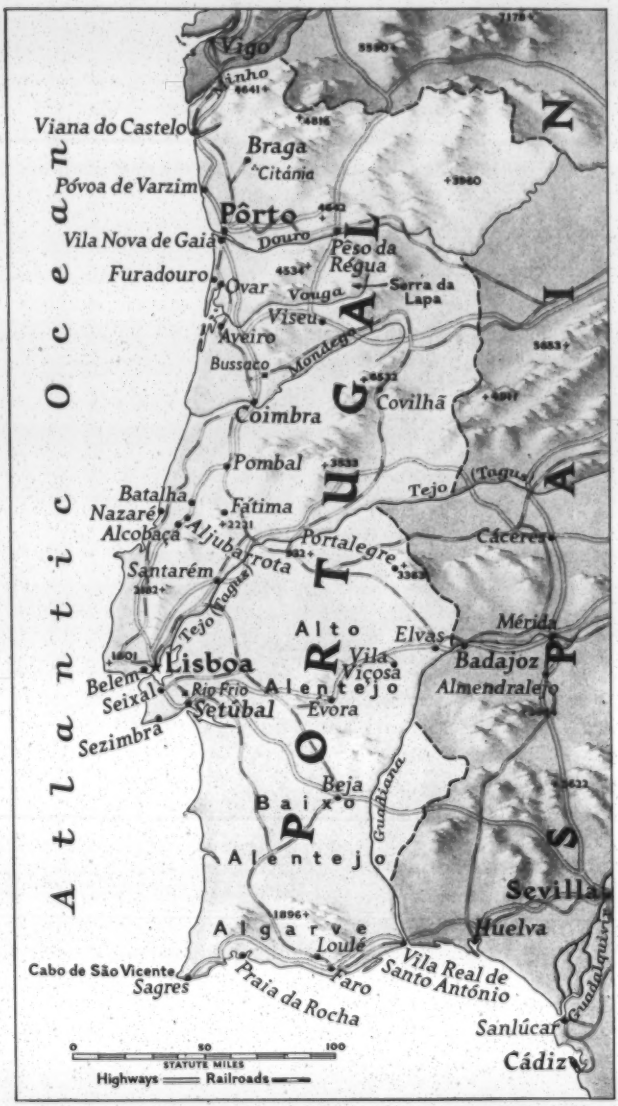
Azores Islands and the Madeira Islands, in the Atlantic to the west and southwest respectively, are considered an integral part of Portugal. These groups, especially the Azores, are strategically situated on transatlantic air and shipping lanes.

Lisbon, Portugal's capital and the nearest European capital to Washington, D. C., emerged from the war as an air-transportation center.

Portugal is a "different" land. It differs greatly even from Spain. Its farmers and fisherfolk have traditions that go back to the 15th and 16th centuries when Portugal, having awakened as a nation by freeing herself from Spain and the Moors, began a career of exploration and colonization that reached from Brazil to the Moluccas. Portugal's sons explored half the world and claimed it for their king. Today, though most of its vast overseas areas are lost, including Brazil, Portugal's colonies still are 23 times the size of the mother country.



DRAWN BY H. E. EASTWOOD AND IRVIN ALLEMAN

EUROPE'S GREEN DOORSTEP, PORTUGAL STRETCHES FROM THE VINEYARDS OF THE DOURO TO THE CORK FORESTS OF THE ALGARVE

NOTE: Portugal is shown on the National Geographic Society's map of Europe and the Near East. Write the Society, Washington 6, D. C., for a map price list.

See also, "Portugal Is Different," in the *National Geographic Magazine* for November, 1948; and "Castles and Progress in Portugal," February, 1938*. *(Issues marked with an asterisk are included on a special list of Magazines available to teachers in packets of ten for $1.00.)*

Bulletin No. 3, March 28, 1949

200-Year-Old Alexandria Plans Full Season

A BIRTHDAY cake with 200 candles is coming up for Alexandria, Virginia—George Washington's home town on the Potomac. The red-letter day is July 13.

Issuance of a commemorative six-cent air-mail stamp on July 11 will touch off the main week of bicentennial celebration, with seven nights of historic pageantry outdoors. Actually the observance of the anniversary year is already under way with an event-crowded schedule which Alexandrians formally launched on January 2.

Started as Tobacco Port

On that Sunday the grown-up village between the nation's capital and Mount Vernon dedicated a plaque. It marks the site at 211 Cameron Street where the sale of the town's first lot at public auction, July 13, 1749, officially put Alexandria on its way. Seventeen-year-old George Washington worked as a surveyor's assistant in laying out the new community's gridiron of ten streets and 84 half-acre lots.

A small settlement of Scottish traders already existed near by around the warehouse at Hunting Creek, built in 1731 to store and ship tobacco. The leaf came to the warehouse in great cylindrical hogsheads rolled in from near-by plantations along old Indian trails converted into "rolling roads."

The warehouse hamlet was known as Belhaven, after a Scottish lord. For a while this name was applied locally to the new town of 1749, although Alexandria was specified as its name in honor of John Alexander, owner of nine square miles of surrounding land.

Present-day Alexandria, covering more than seven and a half square miles to overflowing, counts 75,000, more than triple the population of two short decades ago. Long overshadowed by Washington, it predates the capital by 51 years, and in its early days served as an important port for seagoing trade.

City of Landmarks

Although George Washington lived in the country downriver from Alexandria, he had many interests and responsibilities there, hence its claim to be his home town. On three occasions City Tavern, built in 1752, served as Washington's military headquarters—first in 1754 when he trained local troops to fight the French along the Ohio River.

Old Christ Church, the Carlyle House, and the Friendship Fire Engine House also predate the Revolution. The Coryell House is one of the few examples of Alexandria's gift to American architecture—the flounder-type house, in which the steep lean-to roof meets a solid back wall of brick or frame, unbroken by doors or windows. The *Alexandria Gazette*, founded in 1784, ranks as the nation's oldest daily newspaper.

From 1789 to 1846, Alexandria was part of the new nation's federal district of 100 square miles, straddling the Potomac and contributed by Maryland and Virginia. President Washington's desire to avoid any

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it had long been known as Bai-kul, or "Rich Sea." To the Mongols it was Dalai-nor, or "Holy Sea." The region was a center of Shamanism, the Mongol religion of evil-spirit appeasement. Its medicine men's costumes and incantations fascinated travelers.

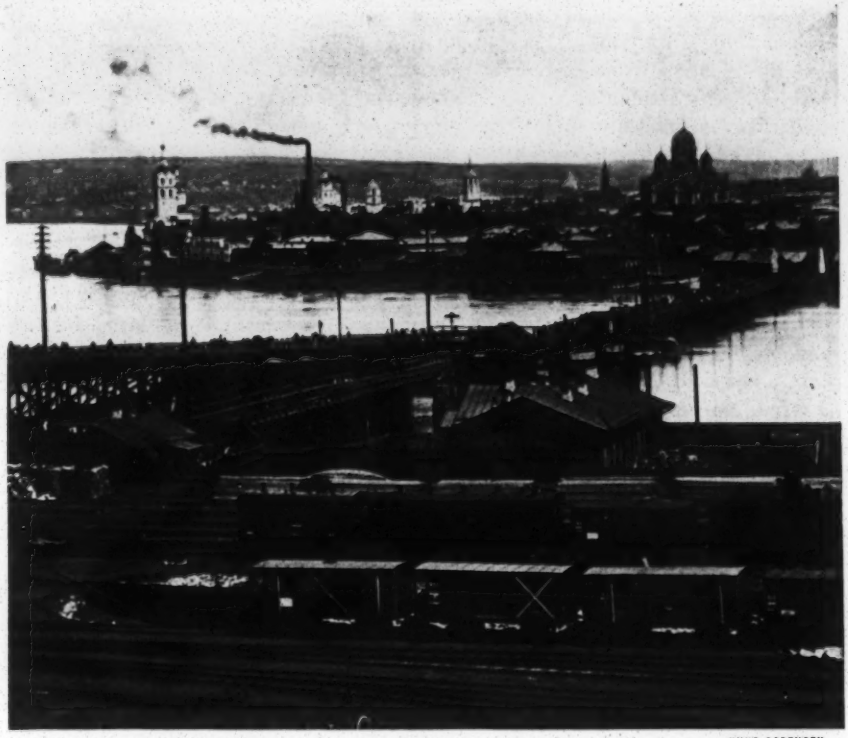
Today the native Buryats and Tunguses, living on collective farms, have increased the tilled acreage threefold. The tractor has broken the virgin steppe. Pedigreed cattle are replacing the yak.

Copper, tungsten, manganese, tin, mica, zinc, nickel, mercury, graphite, aluminum ore, and other deposits abound in the Baikal area.

Baikal's waters drain to the Arctic Ocean via the Angara and the Yenisei. The mighty Lena River arises within a few miles of the lake's western shore, high in the Baikal Mountains (Baikalski Khrebet), but there is no connection between the two bodies of water.

NOTE: Lake Baikal may be located on the Society's map of the Union of Soviet Socialist Republics.

For further information, see "New Road to Asia," in the *National Geographic Magazine*, December, 1944; "I Learn About the Russians," November, 1943*; "Magnetic City" (Magnitogorsk), May, 1943*; and "Japan Faces Russia in Manchuria," November, 1942*.



KNUD SORENSEN

ACROSS THE ANGARA FROM THE TRANS-SIBERIAN RAIL YARDS LIES IRKUTSK, SIBERIA'S CHICAGO

There are several geographical similarities between Irkutsk and Chicago—each has its lake which trains must skirt to the south, each is on a navigable river, and each is a magnet for trade for an immense inland area. Irkutsk was born in 1652 as winter quarters for Cossacks collecting a fur tax from the native Buryats.

Bulletin No. 4, March 28, 1949

U.S. Tea Board Again Sets Standards

FOR next year's tea drinkers, the brew is cast. The tea tasters have spoken. At their annual sniff-and-sip ceremony in New York—launched recently with a public demonstration of the art—the members of the United States Tea Board set the minimum standards for all teas imported into the United States after May 1.

With the last slurp and swoosh of the five-day tests, Uncle Sam's customs requirements in "fair," "medium," and "fine" grades of tea were recorded. These must be observed by firms who are engaged in tea exporting—one of the world's biggest industries.

Some Like It Hot, Some Like It Cold

Except for water and milk, tea is the most widely drunk of beverages. It is also one of the cheapest. It is consumed at London tea parties and Japanese ceremonies, by Tibetan monks who serve it with butter, by Arab sheiks who flavor it with mint, and by certain Mongol tribes who like it with a touch of salt.

The Chinese and Japanese usually take their tea in small cups, the Russians in large glasses, and the Bedouins of the desert in small glasses or steins (illustration, cover), but brewed strong and hot. The Americans are credited with having invented iced tea, to many imbibers one of summer's pleasantest refreshments.

In Burma, tea may be pickled and eaten as a vegetable. Besides drinking it, the Siamese like to chew tea in a kind of gum. A new, faster, and cheaper method of processing the shrub has produced "tea tablets." In this compressed form it occupies less space in ships.

The tea plant is believed to have originated in China. It grows best in moist, warm lands at moderate altitudes. In normal times it is grown chiefly in China, India, Ceylon, Japan (illustration, next page), Formosa, Pakistan, and Sumatra and Java in Indonesia.

A number of other countries also have gone into the industry on a more or less small scale. This development is especially noticeable since Japan seized the vast tea-garden areas of the East during the war and postwar turmoil continued the problems and difficulties of tea raising. Among the newcomers are Brazil, Peru, Bolivia, Australia, New Guinea, and South Africa. Some years ago, the United States experimented for a time with tea-growing in South Carolina and Texas. The plants flourished, but imported tea continued to be cheaper.

A National Tradition to the British

About 800,000,000 pounds of tea are produced annually, but the supply is reported still below prewar levels and not up to the demand. Great Britain, with the biggest thirst for the beverage, uses half the crop, even at its current small ration of two ounces a week per person.

In the three centuries since tea was introduced to London from the Orient, the drink has become a national tradition. It is served in English

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suspicions of land speculation guided his decision to locate the government seat on the Maryland side. He vetoed the hill in west Alexandria where the striking George Washington Masonic National Memorial Temple now stands (illustration, below).

Alexandria came unscathed through the War of 1812, although the invaders looted it of supplies. Reverting to Virginia from the District of Columbia by referendum in 1847, it also escaped damage when held from 1861 to 1865 by Union Army troops.

Trains of seven railroads filter through the east-coast rail bottleneck at Alexandria. Classifying freight, re-icing cars in transit, and building refrigerator cars contribute to the city's big railroading industry.

NOTE: Alexandria is shown on the Society's Pocket Map of Suburban Washington.

For further information, see "Potomac, River of Destiny," in the *National Geographic Magazine* for July, 1945*; "Tidewater Virginia, Where History Lives," May, 1942; "Roads from Washington," July, 1938; "Travels of George Washington," January, 1932; "Virginia—A Commonwealth That Has Come Back," April, 1929; and "Down the Potomac by Canoe," August, 1948.

J. BAYLOR ROBERTS

ALEXANDRIA COMBINES MODERN INDUSTRY WITH HISTORICAL LANDMARKS

In the shadow of the George Washington Masonic National Memorial, workers re-ice refrigerator cars in the yards along the Potomac River at the north end of the Virginia city. Nearly all north-south coastal traffic sifts through this railroad bottleneck across the river from Washington, D. C.

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Dhahran Brightens Drab Arabian Sands

DHAHRAN grows and grows.

The gleaming American-made community over which the Air Force's B-50 bomber took the second of four refuelings on its nonstop round-the-world flight, today counts 20,000 people. A dozen years ago Dhahran was just an Arab name for a desolate stretch of high land in eastern Saudi Arabia.

That parched desert kingdom, one-third the size of the United States, stretches from the Red Sea to the Persian Gulf. The right to take oil on a royalty basis from any part of the eastern half of the country was granted on a long-term basis to Americans in 1933 by King Ibn Saud.

Big United States Settlement

Bahrein Island in the Persian Gulf had by then started to produce, but the Arab mainland was of unknown potential. It still is, except that fields in a small sector around Dhahran already yield a half-million barrels of crude oil daily, and have proved reserves counted in billions of barrels.

United States oil workers, many of them with their families, make up an American community of nearly 5,000 people at Dhahran. There are few larger American settlements anywhere across the seas. Although summer temperatures go above 120 degrees in the shade, many Dhahranians work in comfort in brick office buildings, live in well-appointed one-story houses, and relax in recreation buildings—all air-conditioned from a central plant.

A big hangar-type building shades part of the settlement's large swimming pool. Irrigation makes possible a few trees, flowers, vegetable patches, and pasture for livestock.

Weekends run from Thursday noon through Friday, the Arab day of worship. Moslem workers (illustration, next page), recruited from all parts of the Arab world for oil-field jobs, have their own community with its elaborate mosque. They turn toward Mecca to pray three or more times each work day.

Saudi Arabia Benefits from Royalties

Pipelines carry crude oil to refineries on Bahrein Island and at Ras at Tannura on the mainland shore. A super Big-inch pipeline of 31-inch diameter to be completed in 1950 will carry oil 1,200 miles to Port Sidon, Lebanon, delivering up to 300,000 barrels daily to tankers on the Mediterranean Sea.

From oil royalties already approaching $20,000,000 a year, Saudi Arabia will benefit in many ways. The desert already blooms in a 3,000-acre farm tract at El Kharj Oasis, 35 miles from the king's home and capital at Riyadh. Similar boring of water wells and large-scale irrigation is planned around other of the scarce oasis sites.

On the sands two miles from the Dhahran settlement, United States Army Engineers in 1945 and 1946 built an airfield capable of handling the biggest planes in service on flights to India and other points to the

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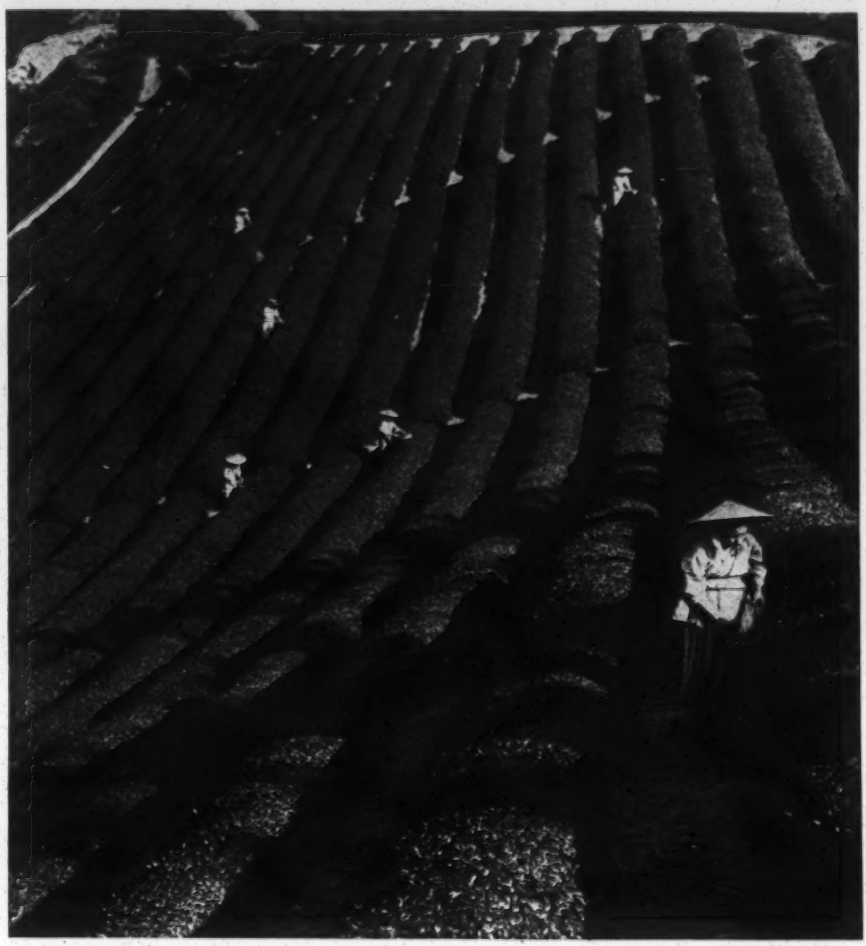
homes, offices, factories, and lately—to stimulate production—in the mines.

In the United States, where coffee is the more popular drink, tea has been gaining a little ground. In 1948, more than 91,000,000 pounds were imported, largely from Ceylon and India. This was about 2,000,000 pounds more than the prewar average. Practically all United States imports are of black tea, with small quantities of oolong and green types.

The only difference in these three classes is in their preparation. The black is strongly fermented, the oolong less so, and the green is processed in such a way that it does not ferment.



GERMAINE KELLERMAN

IN LONG PARALLEL RIDGES, TEA PLANTS STRIPE A HILLSIDE IN HONSHU

At Shizuoka in the central region of Japan's main island, tea pickers harvest a second crop. With scissors, they cut the leaves from the twigs directly into their baskets. In the plucking of the first crop, the tender leaves at the tip of the stalks are picked by hand. These produce green tea of the finest quality. The second picking yields a coarser tea. The tea shrub, which will grow from 15 to 30 feet high if left to nature, is kept trimmed to a height of three to five feet. Plants are set out in rows from three to six feet apart. It takes a plantation three years to come into bearing, and the average life of a tea plant is from 25 to 50 years.

east. A three-year contract placed its operation in United States Air Force hands.

Saudi Arabians have been trained to take over management of the field on expiration of the contract this month. Arrangements for a new agreement to continue landing and refueling privileges for United States planes have progressed favorably.

NOTE: Dhahran may be located on the Society's map of Bible Lands and the Cradle of Western Civilization.

For additional information on the region, see "In Search of Arabia's Past" and "Saudi Arabia, Oil Kingdom" (20 color photographs), in the *National Geographic Magazine* for April, 1948; "Mountain Tribes of Iran and Iraq," March, 1946*; "Bahrein: Port of Pearls and Petroleum," February, 1946; "Guest in Saudi Arabia," October, 1945*; and "Old and New in Persia," September, 1939*.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, November 22, 1948, "Arabs' Neutral Territories May Have Oil."

MAYNARD OWEN WILLIAMS

FROM NOMAD TO OIL DRILLER IN A FEW MONTHS IS THE SAGA OF THIS SAUDI ARABIAN

When American oilmen built Dhahran, workers were recruited from the adjacent areas of Saudi Arabia, a desert land of no machine industry. But Ali learned fast. Now he operates a rotary drill as expertly as he ever guided a camel.